

ABSTRACT

PHYSICAL CHARACTERISTICS AND SOLUBILITY OF QUERCETIN - HYDROGENATED SOYBEAN PHOSPHATIDYLCHOLINE (HSPC) COMPLEX SYSTEM

Firmansyah Rachman

Quercetin in the pharmaceutical application is still limited due to poor absorption and included in the BCS class II (Kakran, et. al., 2011). Therefore, in this study will be made complex with phospholipids Hydrogenated Soybean Phosphatidylcholine (HSPC) which can increase the solubility of *Quercetin*. The ability of phospholipid complex stable and more bioavailable with low interfacial tension between the liquid GIT system. This is very effective in improving the solubility, absorption, and the permeation of the active ingredient. The purpose of this study was to determine the physical characteristics and solubility of *Quercetin*-HSPC Complex with two types of ratio, 1:1 and 2:1. Specific characteristics include morphology, thermal properties, X-Ray diffraction pattern, chemical bond with the FTIR test, and solubility test. *Quercetin*-HSPC Complex was made by solvent evaporation method. The results of the physical characteristics of morphology showed no crystals that are identical to the single *Quercetin* in *Quercetin*-HSPC 1:1 and 2:1 complex. In the thermal analysis and X-Ray diffraction the crystal of *Quercetin* was not found in the complex, so that the molecule *Quercetin* has been distributed homogeneously in the system. In a chemical bonds test also showed a shift wave number of the C = O group in the complex. Solubility test results showed an increase in the solubility of the *Quercetin*-HSPC complex of 2:1 ratio. While on *Quercetin*-HSPC complex 1:1 had no increase and the results of statistical analysis of data by ANOVA showed no significant difference between *Quercetin*, *Quercetin*-HSPC complex 1:1 ratio and 2:1 ratio.

Keyword : Phospholipid Complex, *Quercetin*, Hydrogenated Soybean
Phosphatidylcholine, HSPC, *Quercetin*-HSPC Complex